

Appl. No. 10/604,862  
Amtd. dated July 19, 2006  
Reply to Office action of April 19, 2006

**Amendments to the Claims:**

1. (currently amended) A high-speed optical recording apparatus in an optical storage device for generating a write signal according to an RLL modulation waveform inputted to the high-speed optical recording apparatus, so as to control a writing power of a pickup in the optical storage device, the recording apparatus comprising:  
5 a clock generator for generating a first clock signal;  
an adjustment data storage unit for storing a plurality of sets of write strategy parameters, and selecting and outputting a corresponding set of write strategy parameters from plurality of the sets of write strategy parameters according to the RLL modulation waveform;  
10 a rough delay unit electrically connected to the clock generator to receive the first clock signal, and further electrically connected to the adjustment data storage unit to receive the selected set of write strategy parameters, the rough delay unit for generating a fine delay parameter according to the selected set of write strategy parameters, and for delaying the RLL modulation waveform according to the first clock signal and the selected set of write strategy parameters to generate a first delay signal; and  
15 a fine delay chain electrically connected to the rough delay unit to receive the first delay signal and the fine delay parameter, the fine delay chain for delaying the first delay signal according to the fine delay parameter so as to generate the write signal, the fine delay chain having a plurality of serially connected delay cells, each delay cell delaying the first delay signal by a predetermined period;  
20 wherein the RLL modulation waveform is an NRZI modulation waveform, the apparatus generating the write signal according to an encoded modulation bits; and  
25 the clock generator further generates a second clock signal, the recording apparatus further comprising:  
the clock generator further generates a second clock signal, the recording apparatus further comprising:

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a delay adjustment state machine electrically connected to the clock generator  
to receive the second clock signal, and further electrically connected to  
the adjustment data storage unit to receive the selected set of write  
strategy parameters, the delay adjustment state machine for generating a  
5 rough delay parameter and the fine delay parameter according to the  
selected set of write strategy parameters, and for delaying the NRZI  
modulation waveform according to the second clock signal and the set  
of write strategy parameters so as to generate a second delay signal; and  
a rough delay counter or a rough delay shift register electrically connected to  
10 the clock generator to receive the first clock signal, and further  
electrically connected to the delay adjustment state machine to receive  
the second delay signal in order to delay the second delay signal  
according to the first clock signal, and to receive the rough delay  
parameter so as to generate the first delay signal.

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2. (cancelled)

3. (cancelled)

20 4. (currently amended) The high-speed optical recording apparatus of claim 1 claim 3  
wherein clock generator comprises a phase locked loop for generating the first clock  
signal, and a frequency divider for dividing a frequency of the inputted first clock  
signal to generate the second clock signal.

25 5. (currently amended) The high-speed optical recording apparatus of claim 1 claim 3  
wherein a period of the second clock signal is equal to a base period of the RLL  
modulation waveform.

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6. (currently amended) The high-speed optical recording apparatus of claim 1 claim-3  
wherein a period of the second clock signal is equal to a multiple of a period of the  
first clock signal.

5 7. (currently amended) The high-speed optical recording apparatus of claim 1 claim-3  
wherein a resolution of the delay adjustment state machine delaying the RLL  
modulation waveform is equal to a period of the second clock signal.

10 8. (currently amended) The high-speed optical recording apparatus of claim 1 claim-3  
wherein the rough delay counter comprises a counter, and a comparator.

9. (currently amended) The high-speed optical recording apparatus of claim 1 claim-3  
wherein a resolution of the rough delay counter delaying the second delay signal is  
equal to a period of the first clock signal.

15 10. (currently amended) The high-speed optical recording apparatus of claim 1 claim-2  
further comprising an NRZI input interface for receiving the NRZI modulation  
waveform and generating an address signal.

20 11. (original) The high-speed optical recording apparatus of claim 10 wherein the EFM  
input interface generates the address signal according to a previous land section, a  
current pit section, and a next land section in the EFM modulation waveform.

25 12. (original) The high-speed optical recording apparatus of claim 10 wherein the rough  
delay unit is electrically connected to the NRZI input interface to receive the NRZI  
modulation waveform.

13. (original) The high-speed optical recording apparatus of claim 10 wherein the

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adjustment data storage unit is electrically connected to the EFM input interface to receive the address signal for selecting the corresponding write strategy parameter according to the address signal.

5 14. (currently amended) The high-speed optical recording apparatus of claim 1 ~~claim 2~~  
further comprising a data storage setting interface electrically connected to the  
adjustment data storage unit, and further electrically connected to a microprocessor  
of the optical storage device to receive the sets of write strategy parameters and  
storing the sets of write strategy parameters into the adjustment data storage unit.

10 15. (currently amended) The high-speed optical recording apparatus of claim 1 ~~claim 2~~  
wherein the adjustment data storage unit is a volatile memory.

15 16. (currently amended) The high-speed optical recording apparatus of claim 1 ~~claim 2~~  
wherein the delay cells are a plurality of serially connected inverters or buffers, the  
fine delay chain further comprising a multiplexer for selecting the write signal from  
a plurality of outputs of the inverters or buffers.

20 17. (currently amended) The high-speed optical recording apparatus of claim 1 ~~claim 2~~  
wherein a resolution of the fine delay chain delaying the first delay signal is equal to  
the predetermined period.

25 18. (currently amended) The high-speed optical recording apparatus of claim 1 ~~claim 2~~  
wherein the EFM modulation waveform is generated by an EFM encoder of the  
optical storage device.